საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Approved by
Resolution № 733 of the Academic Council of GTU dated July 6, 2012

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PhD Educational Program

Program Title

სამთო ტექნოლოგიები
Mining Technology

Faculty

სამთო - გეოლოგიური
Mining and Geology

Program Head/Heads

Professor Gela MACHAIDZE

Qualification to be Awarded and the Extent of the Program in terms of Credits

The Doctor of Mining and Geoengineering is awarded if the educational component of the educational program, which is 50 credits, is mastered and if the research component is completed. Duration of study is not less than 3 years.

Language of Teaching

Georgian

Prerequisite for Admission to the Program

A person with a master's qualification or an academic degree equivalent to the specialty production and construction, who meets the requirements for entering doctoral studies in accordance with the rules in force at GTU, is admitted to the PhD educational program in the field of mechanical engineering. When enrolling in a doctoral educational program, the following are taken into account:

- existence of scientific publications;
- participation in scientific conferences;
- other documents and materials related to educational/research activities (certificates, deeds, patents, etc.).

Persons wishing to enroll in the program must present an appropriate international certificate proving English language proficiency at least at the B2 level, or pass an examination at the examination center of the GTU. Applicants educated abroad (who have completed a foreign language program) are not required to take an exam or present a certificate.

The doctoral candidate is interviewed by the interim faculty commission.

It is possible to enroll in the program on a mobility basis twice a year, within the time limits established by the Ministry of Education, Science, Culture and Sports of Georgia, following the mandatory procedures and the rules established by the university.
Enrollment in the program or transfer from a recognized higher educational institution of a foreign country is carried out in accordance with the rules defined by the legislation of Georgia.

Program Description

The program is compiled using the European credit transfer system ECTS. 1 credit is equal to 25 hours, including contact and independent work hours. The distribution of credits is presented in the program curriculum.

The program lasts at least 3 years (6 semesters).

The objectives of the educational component are the sectoral and methodological preparation of the doctoral candidate for the implementation of the goals of the doctoral educational program. The educational component helps the doctoral candidate in the successful preparation of the dissertation, in the future pedagogical and scientific activities. The educational component of the doctoral program is 50 credits.

Before the beginning of the semester, the rector of the university issues an order on the progress of the educational process, which will be posted on the website.

The first semester includes six compulsory study courses (30 credits) of study components. The second semester includes one study-compulsory (5 credits), one study-elective study courses (5 credits), as well as a professor's assistantship (10). The second and subsequent semesters involve the completion of research components, which include a research project/prospectus, Colloquium - 1, Colloquium - 2, Colloquium - 3, pre-defense, thesis completion and defense. The research component is evaluated once, at the thesis defense stage.

Program Objective

The objective of the doctoral program in mining technologies is to train a researcher focused on pedagogical work, equipped with the latest knowledge related to the issues of planning the processing of solid mineral deposits, development and implementation of innovative technologies, and the skills of using modern research methods and technologies:

- in recycling and processing of mineral deposits;
- in shaft and underground construction;
- in mining machinery, energy supply and automation.

Learning Outcomes/Competences (general and sectoral)

- Describes the essence of modern methods of research, technologies based on the latest achievements of mining and extraction, construction of solid mineral extraction enterprises, open pit and mine mining, related processes, mineral processing, exploitation of deposits;
- By expanding and re-understanding the acquired knowledge, explains the need to create new economically efficient and capable technologies, underground and payment methods for separate processes of processing technology in an open manner;
- Participates in independent planning, implementation and supervision of innovative research related to solid mineral extraction and processing technologies;
- Evaluates new research and analytical methods and approaches, which are focused on the creation of new knowledge and are reflected in internationally refereed publications;
- Based on a thorough and competent analysis of the information obtained as a result of research, formulates justified conclusions;
- Plans research to develop new special methods of processing mineral deposits;
- Prepares proposals for solving problems arising during underground or open mining of mineral deposits;
- Participates in the implementation of research projects based on the latest achievements in the field;
- Resolves technological issues in response to emerging challenges in the field of mining and extraction;
- Shares the search for ways to establish values and the development of innovative methods to establish them, the accepted norms of professional values, ethics and morals.

Methods of Achieving Learning Outcomes (teaching-learning)

☒ Lecture ☒ Seminar (group work) ☒ Practical ☐ Laboratory ☐ Scientific and thematic seminar ☒ Independent work ☒ Practice ☒ Consultation ☒ Research component ☒ Structure of the thesis ☒ Thesis defense

In the learning process, depending on the specifics of a particular study course program, the following activities of the teaching-learning methods are used, which are outlined in the relevant study course programs (syllabi): oral or verbal work, discussion/debate, analysis, synthesis, writing work, demonstration, case study, brain storming, deduction, explanation, project development and presentation, action-oriented learning.

Student's Knowledge Assessment System

Assessment is done on a 100-point system. Assessment of the learning component:
Positive grades are:

- (A)-Excellent - 91-100 points;
- (B)-Very Good – 81-90 points;
- (C)-Good – 71-80 points;
- (D)-Satisfactory – 61-70 points;
  (E)-Sufficient – 51-60 points

Negative grades are:

- (FX) - Failed to pass – 41-50 points, which means that the student needs more work to pass and is allowed to take an additional exam once with independent work;
- (F) - Failed - 40 points or less, which means that the work done by the student is insufficient and he/she will have to study the subject again.

Assessment of the scientific research component(s):
a) with the highest praise (summa cum laude) - excellent performance;
b) with great praise (magna cum laude) - result exceeding the requirements in all parameters;
c) with honor (cum laude) - a result that exceeds the requirements;
d) satisfactory (bene) - an average level work that meets the basic requirements;
e) sufficient (rite) - a result that, despite its shortcomings, still meets the requirements;
f) insufficient - an unsatisfactory level work that cannot meet the requirements due to significant deficiencies in the work;
g) completely unsatisfactory (sub omni canone) - a result that completely fails to meet the requirements

In case of FX, an additional examination is scheduled no later than 5 days after the announcement of the results. The grade received at the additional examination is not summarized with the grade received at the final assessment.

Fields of employment

Enterprises and organizations in the field of mining and industry:

- "Industrial Group of Georgia" LLC;
- "Sakanshiri" LLC;
- JSC "RMG Cooper";
- "RMG Gold" LLC;
- "Georgian Manganese" LLC;
- LEPL Gr. Tsulukidze Mining Institute;
- United Water Supply Company of Georgia;
- JSC "Saktskalproekt";
- Educational institutions.

Human and material resources needed to implement the program

The doctoral educational program is provided with appropriate human and material resources. Information is provided in the attached documentation.

Number of attached syllabi: 11